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United States Patent [19][11] **Patent Number:** **6,075,926****Atkins et al.**[45] **Date of Patent:** ***Jun. 13, 2000****[54] COMPUTERIZED METHOD FOR IMPROVING DATA RESOLUTION**

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[52] **U.S. Cl.** **395/102; 382/260; 382/300**

[58] **Field of Search** **382/205, 225, 382/299, 300, 260; 395/102**

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[57] ABSTRACT

A data resolution synthesis algorithm takes low resolution source input data (e.g., data degraded from compression or data acquired from low quality imaging devices) to synthesize high resolution output data. In an exemplary embodiment for color printing, the algorithm is performed by characterizing a multi-pixel area, or window, around a pixel that can benefit from resolution enhancement. To interpolate to a high resolution output a set of spatial filters is applied to the data area based on the window characterization. The output of the resolution synthesizer is a set of multiple pixels for each input pixel, representing the source input pixel in a higher resolution enhanced version. The filters are chosen from a stored data base (generic or specifically applicable data base for each type input device) created to fit input/output device requirements.

16 Claims, 12 Drawing Sheets**(1 of 12 Drawing Sheet(s) Filed in Color)**